DATA BUOY COOPERATION PANEL (DBCP)

NATIONAL REPORT ON CURRENT AND PLANNED BUOY PROGRAMMES

Country	Trinidad and Tobago
Year	2021

1. CURRENT PROGRAMME:

Agency or programme	Caribbean Community Climate Change Centre/ NOAA Coral Health and Monitoring Programme Coral Reef Early Warning System (CREWS) (Maintained by the Institute of Marine Affairs)	
Number and type of buoys	(a) deployed during the year (initially deployed 2013 re-deployed September 2019) Both buoys are now dry docked for repairs	2 YSI EMM 2000 moored buoys (NDBC designations: 42087 and 42088)
	(b) operational as of 31 August	YSI EMM 2000 moored buoys (42088) Mooring broke off in September 2021 and is temporarily secured at a secondary location to be redeployed when mooring lines are repaired.
	(c) reporting on GTS as of 31 August	0
Purpose of programme *(check/uncheck boxes using [_] or [x] as appropriate)*	(a) operational	[x]
	(b) met / ocean research	[x]
	(c) developmental	[ ]
Main deployment areas	Buccoo Reef Tobago and Angel Reef ,Speyside Tobago	
Vandalism Incidents		

2. PLANNED PROGRAMMES:

Agency or programme	Caribbean Community Climate Change Centre/ NOAA Coral Health and Monitoring Programme Coral Reef Early Warning System (CREWS) (Maintained by the Institute of Marine Affairs)	
Number and type of buoys	planned for deployment in the next 12 months	1 NexSens CB950 moored data buoy. (Dates TBD due to COVID restrictions)
Purpose of programme *(check/uncheck boxes using [_] or [x] as appropriate)*	(a) operational	[x]
	(b) met / ocean research	[x]
	(c) developmental	[ ]
Main deployment areas	Buccoo Reef Tobago (To upgrade the original CREWS that was deployed in 2013)	

Agency or programme	Institute of Marine Affairs Marine Space Remote Sensing Project	
Number and type of buoys	planned for deployment in the next 12 months	1 YSI EMM 68 moored buoy (Dates TBD due to COVID and resource restrictions)
Purpose of programme *(check/uncheck boxes using [_] or [x] as appropriate)*	(a) operational	[x]
	(b) met / ocean research	[x]
	(c) developmental	[ ]
Main deployment areas	Chaguaramas, Trinidad	

3. ***TECHNICAL DEVELOPMENTS:***

(a) Buoy design	● NEXSENS CB950 moored buoy
(b) Instrumentation	● We will also be using low maintenance sensors by SeaBird 37 SMP, AirMAR 2000WX, Vaisala WXT536 and LiCOR li-90r on the buoy. ● The GTS will use multiple IP addresses.

4. ***PUBLICATIONS (on programme plans, technical developments, QC reports, etc.):***

For the calendar year 2021, no publications were done on the Trinidad and Tobago data buoys due to COVID 19 related restrictions.

5. ***ADDITIONAL COMMENTS:***

(a) Quality of buoy data	● Last calibration of sensors was conducted in September 2019 ● Insufficient maintenance (high rate of sensor fouling), frequent maintenance is costly. ● No independent quality checks performed on data
(b) Communications	● Currently due to a faulty cable, data is not being transmitted via the GTS to the designated website. ● Data is accessible upon request in the interim.
(c) Buoy lifetimes	● Buoys used are designed to be durable but no life expectancy is given.
(d) Data Accessibility[1]	● Data is shared through the NOAA CHAMP portal https://www.coral.noaa.gov/data/crews-data.html
(e) New Observations[2]	● Ocean currents and waves measurements ● An additional data buoy will be deployed at another coral reef location in Tobago, to collect similar observations as the existing CREWS and thus increase spatial coverage.
(f) GFCS and WIGOS[3]	When the CREWS are functioning: ✓ meteorological data is made available to the NDBC, who have made the data available to all national weather services worldwide ✓ they contribute to satisfying the evolving observation needs of the country and make the data available in near real time to both the country and external users (due to the

[1] How does the international community access the ocean observing data provided by your Organization

[2] What new ocean observations does your Organization plan to make in the upcoming year (i.e. new parameters, expanding geographic scope, filling spatial or latency gaps)?

[3] How do your Organization's observations contribute to the WMO's Integrated Global Observing System (WIGOS) and/or Global Framework for Climate Services (GFCS)?

	coordination with systems operated by an international partner, leading to improved service delivery in-line with the aims of WIGOS. ✓ Under the WIGOS programme, by the system being a coordinated observing component between a WMO member and an international partner, it allows for provision of compatible and quality-assured observations which can satisfy the observational needs of the GFCS ✓ the data is used as input to tailored climate information and services (agro-meteorological products) produced by the National Meteorological Service as decision-support for agriculture and food security under the Climate Services Information System pillar of the GFCS in support of adaptation ✓ the system also contributes in meeting the country's observational requirements for improving timely advisories and early warnings on extreme weather and climate events ✓ these CREWS improve the country's weather and climate monitoring and forecasting services, and indirectly promotes higher visibility for the National Meteorological Service (e.g. it's tailored agro-meteorological products are well received and used)
(g) Additional Requirements[4]	● Dealing with data gaps and resource constraints characteristic of the Caribbean region.
(h) DBCP Linkages[5]	● Our country would benefit from the experience of the global community who have been working with data buoys and sensors far longer than we have. We are interested in interoperability of systems, cost saving measures and best practises. ● We would be interested in collaborative research that would benefit the Caribbean region, an area where data is sparse and much needed.
(i) Contribution to UN Decade and UN SDGs[6]	• This program is in alignment with the main motivation of the UN decade of the Ocean 2021-2030; to reverse the cycle of decline in ocean health and improve conditions for sustainable development of the ocean. • The CREWS program directly contributes to: o SDG 14 by monitoring important ecosystems in SIDS and providing ocean data in a region where it is lacking and needed. o SDG 2 in promoting sustainable agriculture through the use of its data as input in producing tailored 10-day agro-meteorological forecasts and bulletins in support of climate-smart agriculture. o SDG 3 in ensuring healthy living and promoting well-being for all through the use of its data for enhancing early warning for severe weather. o SDG 8 by fostering decent work and economic growth through the protection of reef from data used to monitor heat extremes an sustainable manage and protect the reef from significant adverse impacts which could negatively affect livelihoods and labour productivity

[4] What additional requirements (other than climate) does your organization have that are currently not adequately addressed by the DBCP?

[5] How would your organization benefit from DBCP's closer linkages to the Global Ocean Observing System(GOOS), Data Management and Modelling Communities?

[6]How do your ocean observing networks contributing to the UN decade on Ocean Science and UN Sustainable Development Gloas .

	○ SDG 13 by strengthening linkages to and action on SDG 13-climate action within sectors such as the agriculture and food security and biodiversity sectors and with other sectors through improved access to climate and environmental data.
(j) Other (i.e. Impact of COVID19 on observing systems and mitigation efforts)	● Less travel for routine maintenance (lower maintenance system should be helpful) ● Shipping of replacement sensors may be delayed ● Installation of new systems will be delayed ● Lower budgetary allocations due to national financial constraints may impact the programme. ● We will utilise the time to address some of the existing issues and be prepared to start as soon as restrictions are lifted.